

## ABSTRACT

An information coding apparatus, an information decoding apparatus, and a method and a program therefor are provided, which can represent a large amount of information with a small number of pixels. Information bits which are inputted are coded as a block of a two-dimensional image made up from  $m$  (where  $m$  is a natural number)  $\times$   $n$  (where  $n$  is a natural number) pixels. Specifically, pixels which represent the information bits are arranged in a code area, which is an area of  $(m - o) \times (n - p)$  pixels within a code block of  $m \times n$  pixels (where  $o$  and  $p$  are natural numbers which satisfy  $0 < o < m$  and  $0 < p < n$ ); and, no pixels which represent the information bits are arranged in a guide area, which is an area of the other pixels within the code block of  $m \times n$  pixels.